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California Department of Health Services
Testimony
Los Angeles Regional Water Quality Control Board
Health Effects of Chromium VI in Drinking Water
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Mr. Chairman and members, my name is David Spath. I am Chief of the Division of Drinking Water and Environmental Management at the State Department of Health Services. I am responsible for managing the State's Drinking Water Regulatory Program. That responsibility includes making recommendations to the Director of the Department of Health Services on appropriate standards for chemicals in drinking water. I appreciate the opportunity to come before you to discuss the issue of chromium 6 in drinking water particularly with the regard to the Department's activities in reviewing the appropriateness of the present drinking water standard for chromium and in assessing the need for a possible separate drinking water standard for chromium 6. Before I begin I would like to compliment the Board members on their interest concerning chromium 6. Hopefully, this hearing will provide a better understanding of the complexities associated with setting drinking water standards and the efforts undertaken by the respective State agencies to ensure that high quality drinking water is provided to the citizens of California.

I would like to begin by discussing the drinking water standard setting process and the role of public health goals in that process as well as providing some background on the standard for chromium. Presently there is no state or federal drinking water standard for chromium 6. There is a drinking water standard for total chromium, which is a measure of both chromium 3 and chromium 6 in drinking water. The total chromium standard in

California is 50 parts per billion while the federal standard is 100 parts per billion. The federal standard was revised upward from 50 parts per billion in the early 1990's. The Department, however, chose not to revise the state standard at that time.

In February 1999, the State Office of Environmental Health Hazard Assessment adopted a public health goal for total chromium of 2.5 parts per billion. Judging from the articles in the media over the past couple of months, there is a great deal of confusion as to the meaning and intent of a public health goal and the relationship between drinking water standards and public health goals.

Standards are the levels that public water systems are required to meet in the drinking water that they provide their customers. California law mandates that the Department set drinking water standards as close to the corresponding public health goals as is technologically and economically feasible. Public health goals, which as I indicated are established by the State Office of Environmental Health Hazard Assessment, are levels that are set solely on health risk considerations and do not consider costs or technical feasibility. The law requires that public health goals be set at a level that, for acutely toxic substances, avoids any known or anticipated adverse effects on public health with an adequate margin of safety and, for carcinogens or substances that may cause chronic disease, at a level that does not pose any significant risk to health.

In crafting the law, the Legislature intended that the public health goal be the starting point for the Department when determining the most appropriate standard, while it acknowledged

that in setting a drinking water standard there is a balance that must be reached between the cost to the public and the benefit the public receives in risk reduction. As a result there are cases where the public health goal and the drinking water standard are at different levels. The Legislature also intended that the public be allowed to make local decisions regarding compliance with the public health goal. The law requires public water systems to hold periodic hearings to inform their customers of the cost of complying with public health goals and respond to public comment. The customers, for example, could then request a referendum on paying for the additional cost of meeting the public health goal or staying with the drinking water standard. The Department is not aware of any instances in which customers have opted to pay additional costs to meet the public health goal.

I would also like to briefly describe what the Department has done since the public health goal for total chromium was adopted in February 1999. In March 1999, the Department gave notice that we would be evaluating the total chromium drinking water standard to determine if the standard should be revised. After an initial review we determined that there needed to be a better understanding of the distribution of chromium 3 and chromium 6 in drinking water in the State. The public health goal for total chromium was based on national data on the distribution of chromium 3 and chromium 6 and assumes that on average chromium 6 makes up about seven percent of the total chromium in drinking water. To test that assumption the Department collected recent information on chromium 6 from water systems that had been sampling for the chemical. In August 1999, the Department of Health Services began conducting its own chromium 6 sampling study at a number of water systems in various regions of the State. That study was completed in

January 2000. The Department's study and the information from a small number of water systems suggested that, on average, chromium 6 makes up a much larger percentage of the total chromium in drinking water, perhaps greater than 50 percent. As a result of that work the Department concluded that we needed information on the statewide occurrence of chromium 6 in drinking water before we could adequately determine if the standard should be revised and, if so, what level that should be. The Department announced that instead of revising the total chromium standard we would be adopting a regulation to require statewide monitoring by water systems for chromium 6. As required by law, the Department must hold public hearings on that decision. The first hearing was held on September 6th in Sacramento and the second on September 14th in Los Angeles. The Department has drafted and submitted for review a proposed regulation to implement the statewide monitoring requirement. We hope to have the regulation in place on an emergency basis before the end of the year. The Department has also sent letters to all water systems that would be affected by the regulation recommending that they begin their monitoring in anticipation of the rule being in place. Once we have sufficient occurrence data on chromium 6, the Department will reevaluate the total chromium standard or consider regulating chromium 6 separately.

In addition, with the recent signing by the Governor of Senate Bill 2127, the Department has also begun working with water systems in the San Fernando Valley to develop information on the levels of chromium 6 in drinking water that are being served to the Valley residents. With those data we will be able to begin the assessment of exposure and risks to the public as required by the bill.

With regard to information on the health effects of chromium 6 the risk from chromium 6 is very much dependent on the way in which exposure occurs. There is a considerable body of health effects data on inhalation exposure to chromium 6. Those data indicate that chromium 6 is carcinogenic to humans through inhalation. There is far less certainty with regard to the carcinogenic risk of chromium 6 when the exposure is through ingestion. In adopting the public health goal for total chromium, the State Office of Environmental Health Hazard Assessment, following the requirements of the law, took a conservative position and concluded that chromium 6 should be considered carcinogenic through ingestion. That resulted in a stringent public health goal for total chromium. Other agencies such as the U.S. Environmental Protection Agency have concluded that there is not sufficient evidence to conclude that chromium 6 is carcinogenic through ingestion. For a more detailed assessment of the health effects information on chromium 6, I refer you to the public health goal document prepared by the Office. It can be found on their website.

In closing, our advice to water systems is that they test for chromium 6 particularly those systems that have detected chromium in their drinking water sources through previous monitoring. We also recommend that those water systems that have detected chromium and have sources in close proximity to contamination sites or industries that used chromium such as electroplaters, increase the frequency of their monitoring. The Department will also be reviewing existing water quality data on chromium and may require more frequent monitoring for those affected water systems with sources vulnerable to contamination. The Department does not believe, however, that water systems should discontinue the use of water sources that contain chromium above the public health goal of

2.5 parts per billion. We believe that the Legislature has established a prudent process for the Department to review drinking water standards. Pending completion of the Department's review, the State's drinking water standard for total chromium remains at 50 parts per billion.

That concludes my remarks. If you have any questions, I will be happy to try to answer them.